

## **REMARKS**

### **1. Summary of Office Action Mailed January 11, 2005**

In the Office Action mailed January 11, 2005, with claims 1-24 pending, the Examiner (i) objected to certain informalities in the specification and claims; (ii) rejected claims 1-6, 9-11, 13, 14, 17-19, and 21-24 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent 6,466,964 (Leung); (iii) rejected claims 7, 12, 15, 16, and 20 under 35 U.S.C. § 103(a) as unpatentable over the combination of Leung and U.S. Patent Application 2002/0021681 (Madour); and (iv) rejected claim 8 under 35 U.S.C. § 103(a) as unpatentable over the combination of Leung and Farinacci, "RFC 2784 – Generic Routing Encapsulation (GRE)."

### **2. Pending Claims**

Presently pending in this application are claims 1-24, of which claims 1, 5, 9, 13, 17, and 21-24 are independent. Claims 1, 2, 5-9, 12, 13, 16-18, and 20-24 are amended herein.

### **3. Response to Examiner's Objections**

The Examiner objected to certain informalities in the specification and claims. In the specification, the Examiner suggested that the word "and" should be deleted from Page 6, line 23. Applicant respectfully submits that the Examiner was referring to the word "and" on line 9 of page 6. In the claims, the Examiner requested that the acronym "PDSN" be spelled out at least once in claim 13. The specification and claim 13 have been amended to address those objections, and Applicant respectfully requests that the objections be withdrawn.

**4. Response to Examiner's Rejections under 35 U.S.C. § 102**

**a. Independent Claims 1, 17, 23, and 24; Dependent Claims 2-4, 18, and 19**

The Examiner rejected claim 1 under 35 U.S.C. § 102(e) as anticipated by Leung. To anticipate a claim, a reference must teach every element of the claim. MPEP § 2131. Claim 1 is directed to a method for establishing a connection with a mobile node, the method comprising “determining a tunnel identifier [that] is independent of (i) a home address of the mobile node and (ii) an address of a home agent” and “receiving data packets from the home agent..., the data packets including the tunnel identifier; identifying the connection using the tunnel identifier; and routing the packets along the connection.” Neither Leung nor conventional Mobile IP teach identifying a connection over which to route packets to a mobile node using a tunnel identifier that is independent of both the mobile node's home address and home-agent (HA) address.

In Leung, as in conventional Mobile IP, when a packet data serving node (PDSN) (foreign agent (FA)) receives packets from a mobile node's home agent intended for that mobile node, the FA uses both the mobile node's home address and HA address to identify a connection (such as a point-to-point protocol (PPP) connection) over which to route the packets to the mobile node. More specifically, the FA will typically carry out a “hash function,” where the inputs to the hash function are the mobile node's home address and HA address, and the output is an index into a table of PPP connections.

In Leung, and in Mobile IP generally, both the mobile node's home address and HA address are needed to uniquely identify the correct mobile node to which to route packets, because two mobile nodes connected to the same FA could have identical home addresses, while each has a different HA. The reason for this is that multiple HAs may each assign the same

private IP address (such as 192.168.1.101) as a home IP address to respective mobile nodes, to conserve the IP address space as a general matter.

Claim 1, in contrast, is directed to a method where the tunnel identifier that is used to identify the connection to the mobile node is independent of the mobile node's home address and HA address. This identifier, perhaps just a simple integer, is merely extracted from packets sent from the HA to the FA, intended for the mobile node, and used directly to identify the correct connection to the mobile node, without the FA needing to extract both the home address and the HA address, and then perform a computation, before finally looking up the correct connection. As such, with the method of claim 1, the connection to the mobile node can be identified more quickly (i.e., a "PDSN Fast Tunnel Lookup"). Therefore, Leung does not anticipate claim 1.

The Examiner also rejected claims 2-4, 17-19, 23, and 24 as anticipated by Leung. Claims 2-4 depend from claim 1, and thus contain all of the limitations of claim 1. As Leung does not anticipate claim 1, Leung similarly does not anticipate claims 2-4. And for the reasons given above with respect to claim 1, Leung does not anticipate claims 17, 23, or 24. Claims 18 and 19 depend from claim 17, and thus contain all of the limitations of claim 17. As Leung does not anticipate claim 17, Leung similarly does not anticipate claims 18 and 19.

**b. Independent Claims 5 and 21; Dependent Claim 6**

The Examiner also rejected claim 5 under 35 U.S.C. § 102(e) as anticipated by Leung. Claim 5 is directed to a method for establishing a connection with a mobile node, the method comprising "assigning a tunnel identifier to [a] call..., wherein the tunnel identifier is independent of (i) a home address of the mobile node and (ii) an address of [a] home agent; receiving packets of data from the home agent, each of the packets of data including the tunnel

identifier; and subsequently, using the tunnel identifier to identify the connection for packets having the tunnel identifier.”

Thus, claim 5, like claim 1, includes using a tunnel identifier – that is independent of a mobile node’s home address and HA address – to identify a connection with the mobile node; as such, Leung does not anticipate claim 5 for the reasons given above with respect to claim 1. The Examiner also rejected claims 6 and 21 as anticipated by Leung. Claim 6 depends from claim 5, and thus contains all of the limitations of claim 5. As Leung does not anticipate claim 5, Leung similarly does not anticipate claim 6. And for the reasons given above with respect to claim 5, Leung does not anticipate claim 21.

**c. Independent Claims 9 and 22; Dependent Claims 10 and 11**

The Examiner also rejected claim 9 under 35 U.S.C. § 102(e) as anticipated by Leung. Claim 9 is directed to a method comprising “assigning an identifier to [a] data stream, wherein the identifier is independent of (i) a home address of a mobile node and (ii) an address of a home agent for the mobile node; receiving return packets of information, the return packets of information including the identifier; and translating the identifier into a connection and transmitting the return packets using the connection.”

Thus, claim 9 is directed to a method that includes translating an identifier – that is independent of a mobile node’s home address and HA address – into a connection with the mobile node; as such, Leung does not anticipate claim 9 for the reasons given above. The Examiner also rejected claims 10, 11, and 22 as anticipated by Leung. Claims 10 and 11 depend from claim 9, and thus contain all of the limitations of claim 9. As Leung does not anticipate claim 9, Leung similarly does not anticipate claims 10 and 11. And for the reasons given above with respect to claim 9, Leung does not anticipate claim 22.

**d. Independent Claim 13; Dependent Claim 14**

The Examiner rejected claim 13 under 35 U.S.C. § 102(e) as anticipated by Leung. Claim 13 is directed to a system comprising a mobile node, a packet data-switching node (PDSN), and a home agent, wherein “the PDSN assign[s] a tunnel identifier to a plurality of packets received from the mobile node; the home agent send[s] return packets to the PDSN including the tunnel identifier; the tunnel identifier is independent of (i) a home address of the mobile node and (ii) an address of the home agent; and the PDSN extracts the tunnel identifier from the return packets and translates the tunnel identifier into information representative of the connection, and transmits the return packets on the connection.”

Thus, claim 13 is directed to a system in which a PDSN translates an identifier – that is independent of a mobile node’s home address and HA address – into information representative of a connection with the mobile node, and transmits packets to the mobile node on that connection; as such, Leung does not anticipate claim 13 for the reasons given above. The Examiner also rejected claim 14 as anticipated by Leung. Claim 14 depends from claim 13, and thus contains all of the limitations of claim 13. As Leung does not anticipate claim 13, Leung similarly does not anticipate claim 14.

**5. Response to Examiner’s Rejections under 35 U.S.C. § 103**

**a. Dependent Claims 7, 12, 15, 16, and 20**

The Examiner rejected claims 7, 12, 15, 16, and 20 under 35 U.S.C. § 103(a) as unpatentable over the combination of Leung and Madour. Among the requirements to establish a *prima facie* case of obviousness is that the prior art references when combined must teach or suggest all the claim limitations. MPEP § 2143.

Claim 7 depends from claim 5, and thus contains all of the limitations of claim 5. Claim 12 depends from claim 9, and thus contains all of the limitations of claim 9. Claims 15 and 16 depend from claim 13, and thus contain all of the limitations of claim 13. Claim 20 depends from claim 17, and thus contains all of the limitations of claim 17.

As explained, Leung does not teach all of the limitations of claim 5, 9, 13, or 17. Madour fails with respect to each of those claims to make up for this deficiency. In particular, Madour fails to teach using a tunnel identifier – that is independent of a mobile node’s home address and HA address – to identify a connection over which to route packets to the mobile node. Thus, claims 7, 12, 15, 16, and 20 are patentable over the combination of these references.

**b. Dependent Claim 8**

The Examiner rejected claim 8 under 35 U.S.C. § 103(a) as unpatentable over the combination of Leung and RFC 2784. Claim 8 depends from claim 5, and thus contains all of the limitations of claim 5. As explained, Leung does not teach all of the limitations of claim 5. RFC 2784 fails to make up for this deficiency. In particular, RFC 2784 fails to teach using a tunnel identifier – that is independent of a mobile node’s home address and HA address – to identify a connection over which to route packets to the mobile node. Thus, claim 8 is patentable over the combination of these references.

**6. Conclusion**

Applicant submits that all of the pending claims are now in condition for allowance. Therefore, Applicant respectfully requests favorable action. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at 312-913-3303.

Respectfully submitted,

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Date: April 29, 2005

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### **AMENDMENTS TO THE DRAWINGS**

Applicant submits herewith a replacement drawing sheet containing Figures 5 and 6.

Figure 5 has not been amended. Figure 6, however, has been amended to correct a typographical error, in order to make Figure 6 consistent with the written description.